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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

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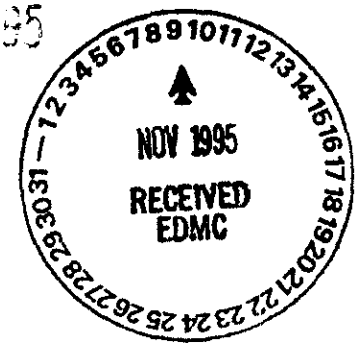

Mr. Joe Stohr
Section Manager
Nuclear Waste Program
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Mr. Stohr:

CADMIUM AS A CONSTITUENT OF CONCERN AT THE 183-H SOLAR EVAPORATION BASINS

The U.S. Department of Energy, Richland Operations Office (RL), is requesting the State of Washington, Department of Ecology's (Ecology), review and approval of the following information associated with cadmium contamination at the 183-H Solar Evaporation Basins.

A Data Quality Objective process meeting on 183-H soil remediation was held August 11, 1995. This meeting concluded that cadmium was still under consideration as a constituent of concern at 183-H. Further examination of cadmium data in the soils below 183-H has concluded that cadmium is found at concentrations above the action level. The action level for cadmium is identified as 0.5 ppm based on 100 times the maximum contaminant level for groundwater protection.

Cadmium concentrations in surface soils are found within the entire footprint of the unit above the action level. Two sample points in the vadose zone are also above the action level (at 13 feet in Borehole 6 and at 24 feet in Borehole 2). Although the surface soils can be removed, because of their depth and spatial distribution, the vadose zone sample points would require closure of the unit as a landfill without Ecology's removal of cadmium as a constituent of concern at 183-H.

The two cadmium data points in the vadose zone have no discernable contaminant plumes associated with them. The lack of a contaminant plume calls into question whether the cadmium is attributable to 183-H activities or is naturally occurring. Cadmium-containing wastes were not added in large quantities to 183-H. Waste disposal records show the following waste streams being sent to 183-H: 100 gallons that contained-10 ppm cadmium; 15.5 gallons that contained 6 ppm cadmium; and, 15 gallons that contained 40 ppm cadmium. Sludges removed from the basins contained around five ppm cadmium.

Eight surface soil samples were taken southwest of 183-H in an area that has not been impacted by Hanford operations. These samples were taken for the express purpose of defining an area background. The 90th percentile on the mean (lognormal distribution) for these eight samples is 6.2 ppm which is similar to both the two vadose zone samples and to the surface soil samples found at 183-H. These eight samples cannot be used to define background conditions near 183-H (WAC 173-340), but serve to indicate that natural

background levels on the Hanford Site fall within a broad range of values. The bulk of cadmium analyses of background soils at Hanford are below detection levels in the 0.5 ppm range. However, Hanford riparian soils are higher in cadmium and are within the same order of magnitude as those found in surface and vadose zone soils at and near 183-H.

RL is currently evaluating the ability to clean up the soils under 183-H to residential action levels as established under the Model Toxics Control Act. Assuming that cadmium in the vadose zone can be released from concern, RL anticipates that residential levels can be met through soil removal actions for all constituents of concern including surface cadmium contamination.

Because of the above supporting information, RL does not consider that cadmium contamination in the 183-H vadose zone should be a cause for closure of 183-H as a landfill. Further, RL considers that cadmium levels in the vadose zone soils should allow for a determination that the soil column under 183-H meets residential cleanup levels. RL is requesting that Ecology release cadmium as a constituent of concern at 183-H based on this information and confirm that the vadose zone soil will be deemed as meeting residential levels for cadmium.

RL will continue groundwater monitoring of the unit as part of its post-closure care obligations. Groundwater monitoring is currently required at this unit under a final status compliance monitoring program (WAC 173-303-645[10]) and will continue for the length of the compliance period. Cadmium is among the constituents that will be monitored at the 183-H system.

If you want to discuss this matter further or require additional information, please contact me at (509) 376-7121.

Sincerely,

Jeffrey M. Bruggeman, Project Manager
Decontamination and Decommissioning Project

DDP:JMB

cc: R. Cordts, Ecology
M. Janaskie, EM-442
L. Miller, BHI